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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,345	03/26/2004	Rodney Badcock	F0416	8236

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EXAMINER	
SONG, SARAH U	
ART UNIT	**PAPER NUMBER**
2874	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/810,345	BADCOCK ET AL.	
	Examiner	Art Unit	
	Sarah Song	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in United Kingdom on September 28, 2001 and October 22, 2001. It is noted, however, that applicant has not filed a certified copy of the United Kingdom applications as required by 35 U.S.C. 119(b). In this regard, please note that this is **not** a national stage application (35 U.S.C. 371) of PCT Application PCT/GB02/04437, but is rather a continuation of the PCT Application. The certified copy of the priority document has thus not been supplied by the International Bureau. It is applicant's responsibility to furnish the certified copy of the United Kingdom application required by 35 U.S.C. 119(b).

Claim Objections

2. Claims 1 and 2 are objected to because of the following informalities: "the data" lack proper antecedent basis. Appropriate correction is required.

3. Claim 3 is objected to because of the following informalities: Examiner suggests changing "made" to –mode—. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. **Claims 1-8, 15 and 23-31 and 33-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Pi et al. (U.S. Patent 6,744,948).**

6. Regarding claims 1-8, Pi et al. discloses a monitor for monitoring at least one optical signal parameter in an optical fibre 140 having an access region 144 of reduced cladding sufficient to allow access to the evanescent field, the monitor comprising an optical element 410 mountable adjacent to the access region of an optical fibre which optical element is capable of obtaining access to the evanescent field to enable use of the data therein to derive the at least one optical parameter and also a monitor for monitoring the optical signal parameters in an optical fibre comprising a fibre 140 having an access region 144 of reduced cladding sufficient to allow access to the evanescent field of the optical fibre and an optical element 410 mounted adjacent to the access region to obtain access to the evanescent field so as to enable use to be made of the data therein. The fibre is a single mode fibre, a multimode fibre or a polarisation maintaining fibre (column 5, lines 65-67). The optical element is a photo detector (column 5, line 33) arranged to access the evanescent field and produce an electrical signal related thereto. Means (e.g. the substrate and groove) are provided for maintaining the photo detector and the access region in a fixed relationship. The photo detector is in contact with the access region of the fibre (see Figure 4).

7. Regarding claim 15, plurality of fibres are arranged in parallel and have aligned access areas and a photo detector array spans all of the access regions. See Figure 8, column 6, lines 48-56.

8. Regarding claims 23-28, Pi et al. also discloses a control arrangement for controlling a signal in an optical fibre comprising a monitor as claimed, said control arrangement further

including a controller 620 responsive to the at least one optical signal parameter to alter at least one parameter of the signal. The monitor 410A is arranged before the controller when viewed in the direction of the passage of an optical signal. The monitor 410B is arranged after the controller when viewed in the direction of the passage of an optical signal to provide closed-loop control. The controller controls an attenuator, and therefore is arranged to alter at least the power of the signal. The control arrangement further including a variable optical attenuator 610 upstream of the monitor and control means for controlling the attenuator including an input for setting the desired power and means for comparing the output from the monitor with the desired power input (Figure 7). The control arrangement more specifically comprises said monitor 410A arranged upstream of the attenuator 610, a second monitor 410B arranged downstream of the attenuator and control means 620 for controlling the attenuator including means for determining the attenuation in the fibre from the outputs of the two monitors, an input for setting the desired attenuation and means for comparing the determined attenuation with the desired attenuation and controlling the attenuator accordingly (see column 6, lines 7-37).

9. Regarding claims 29-31 and 33-36, Pi et al. discloses a multi-guide fibre circuit comprising a plurality of optical fibres 140 having access regions 144 formed therein for access to the evanescent field of the fibres, these regions being transversely aligned to form a substrate surface and an electro- and/or optical circuit on the substrate surface with access to the evanescent field. The surfaces of access regions 144 are optically flat and lie substantially in the same plane. The fibres are mounted in a plurality of parallel grooves 120 in a block of material 110. The electro- and/or optical circuit comprises a variable attenuator and a tap (Figure 8). The

method of claims 24-26 are also disclose as setting forth requisite steps for making the device as provided by Pi et al.

10. **Claims 1 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Zhao et al. (U.S. Patent 6,690,857).**

11. Regarding claims 1 and 16, Zhao et al. discloses a monitor for monitoring at least one optical signal parameter in an optical fibre 140A having an access region 1710 of reduced cladding sufficient to allow access to the evanescent field, the monitor comprising an optical element 140B mountable adjacent to the access region of an optical fibre which optical element is capable of obtaining access to the evanescent field to enable use of the data therein to derive the at least one optical parameter and also a monitor for monitoring the optical signal parameters, wherein the optical element is a second optical fibre, one end of which is located adjacent to the access region fro capturing light output from the evanescent field.

12. **Claims 1 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Hodge et al. (U.S. Patent 4,784,452).**

13. Regarding claims 1 and 16, Hodge et al. discloses a monitor for monitoring at least one optical signal parameter in an optical fibre 10 having an access region 18 of reduced cladding sufficient to allow access to the evanescent field, the monitor comprising an optical element 20 mountable adjacent to the access region of an optical fibre which optical element is capable of obtaining access to the evanescent field to enable use of the data therein to derive the at least one optical parameter, wherein the element comprises a second optical fibre 20, one end of which is located adjacent to the access region fro capturing light output from the evanescent field.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. **Claims 9-14, 18-22, 32 and 37-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pi et al.**

16. Regarding claims 9-14, Pi et al. discloses the claimed invention except for a lens, polariser, filter, a plurality of different polarisers or a plurality of different wavelength filters. Pi et al. does disclose intervening couplers between the access regions and the photodetectors, including a high-index overlay 420 or a prism overlay 1112 for example, for assisting in extraction of the desired signal. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide well known couplers such as lenses, polarisers, filters and even a plurality of different polarisers or filters for the purpose of assisting the extraction of the desired signal and enhancing the efficiency of the coupling into the photodetector.

17. Regarding claims 18-22, Pi et al. does not expressly disclose a means for splitting and a means for combining as claimed. However, it is well known in the art to provide an array of VOAs in a WDM system, wherein the WDM system comprises a means for splitting (e.g. demultiplexer), a plurality of fibers, and a means for combining (e.g. multiplexer). The provision of an array of VOAs corresponding to the plurality of fibers is known to provide equalization of the multiple channels for optimized performance. Therefore, it would have been

obvious to one having ordinary skill in the art at the time the invention was made to provide the monitor of Pi et al. in combination with a means for splitting and a means for combining as claimed for the purpose of optimizing WDM transmissions as was known in the art.

18. Regarding claims 32 and 37, Pi et al. discloses the claimed invention wherein the grooves are V-shaped and etched into one of the block (column 3, lines 21-46), but Pi et al. does not expressly disclose a silicon block. However, silicon blocks are well known in the art for formation of fiber arrays and etched V-grooves. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a silicon block as the substrate of Pi et al. for the purpose of providing a cost-effective material with high positional accuracy for the grooves.

19. Regarding claims 38-41, Pi et al. discloses the method of making the device as discussed above, but does not expressly disclose the steps wherein the circuit is made on the substrate surface by applying masking to the substrate surface removing the masking from regions of the substrate to be exposed and forming electrodes or attaching optical devices to the exposed regions, wherein areas on which electrodes are to be mounted are exposed at a first time and the areas to which optical devices are to be attached are exposed at a second time, or wherein the said first time is later than said second time. However, standard optoelectronic circuit fabrication methods comprise steps such as wherein the circuit is made on the substrate surface by applying masking to the substrate surface removing the masking from regions of the substrate to be exposed and forming electrodes or attaching optical devices to the exposed regions, wherein areas on which electrodes are to be mounted are exposed at a first time and the areas to which optical devices are to be attached are exposed at a second time, or wherein the said first time is

later than said second time. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize standard manufacturing processes to fabricate the device of Pi et al. since Applicant has not disclosed that the particular method steps are for any particular purpose or solve any stated problem. Regarding claim 41, it is noted that the electrodes of Pi et al. are the electrodes of a variable attenuator and the optical device is a tap.

20. In conclusion, the above-identified differences between the subject matter sought to be patented and the U.S. Patent to Pi et al. are such that the subject matter, **considered as a whole**, would have been obvious at the time the invention was made to a person having ordinary skill in the art.

21. **Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hodge et al.**

22. Regarding claim 17, Hodge et al. discloses a lensed end face 42 of the fiber 20 (Figure 8) wherein the lens is the end face, but does not expressly disclose a lens interposed between the access region and the end of the fiber 20. However, fibers aligned with separate lenses are well known in the art as equivalents to lensed fiber end faces. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a lens interposed between the access region and the fiber end face of Hodge et al. since the Examiner takes Official notice of the equivalence of an integrally lensed fiber and a fiber with a separate lens for their use in the optical fiber art and the selection of any of these known equivalents to lensed couplers would be within the level of ordinary skill in the art. Furthermore, the modification would have been obvious since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art.

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Grimes et al. discloses a fiber tap coupler comprising a lens interposed between the access region and the end of the tap fiber in Figure 5.

24. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarah Song whose telephone number is 571-272-2359. The examiner can normally be reached on M-Th 7:30am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on 571-272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Sarah Song
Primary Examiner
Art Unit 2874